

# The Los Angeles Classification of Gastroesophageal Reflux Disease



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## Abstract

Endoscopic assessment of the esophagus for the presence or absence of gastroesophageal reflux disease (GERD) as well as the assessment of its severity is crucial to formulating decisions about the patient's management and prognosis. Therefore, a validated tool is required to ensure agreement among different endoscopists. The Los Angeles classification system of GERD is by far the most widely used system to describe the endoscopic appearance of reflux esophagitis and grade its severity.<sup>1</sup> This article is part of an expert video encyclopedia.

## Keywords

Acid reflux; Classification; Endoscopy; GERD; Los Angeles; Standard endoscopy; Video.

## Video Related to this Article

Video available to view or download at doi:10.1016/S2212-0971(13)70046-3

## Materials

- High definition gastroscope: GIF-H260; Olympus, Tokyo, Japan.
- Display screen: Olympus OEV-261H high definition liquid crystal display monitor; Olympus, Tokyo, Japan.

## Background and Endoscopic Procedures

The endoscopic assessment of esophageal mucosal changes in patients with reflux symptoms is important to diagnose patients at various degrees of severity. It is well known that the endoscopic severity of esophagitis correlates with the likelihood of responding to certain treatments and with the risk of developing complications, for example, peptic strictures.<sup>2</sup>

Historically, there has been a significant variability among endoscopists in describing the range of endoscopic appearances associated with acid reflux. This has led to difficulties in communication between the health care teams and patients

and was a significant barrier to the accurate interpretation of the results of therapeutic clinical trials reporting success rates of treatment in erosive reflux disease.<sup>3</sup>

Subsequently, well over 30 different sets of criteria describing the endoscopic assessment of GERD were published over the years, but they all lacked formal development, validation, or peer review, including the well-known Savary-Miller classification system.<sup>1</sup>

The Los Angeles (LA) classification system was published in its final form back in 1999 (Table 1).<sup>2</sup> It was developed by the International Working Group for the Classification of Oesophagitis, supported by the World Organization of Gastroenterology, and was first proposed in 1994.<sup>4</sup> It was first presented at the Los Angeles World Congress of Gastroenterology, and hence the name of the classification.

It is the most validated classification system. Furthermore, it has been consistent at predicting the outcome of acid reflux therapy, correlates well with other tests of acid reflux such as 24-h pH monitoring studies, and when compared with other grading systems, it was the most reproducible and practical.<sup>1</sup> One limitation of the LA classification system is that it excludes minimal mucosal changes that are associated with reflux disease. Recent advances in endoscopic imaging techniques have allowed the visualization of these changes. However, the clinical significance and accuracy of these findings need to be validated rigorously before incorporating them into the classification system.

**Table 1** The Los Angeles Classification of Oesophagitis

|                |   |
|----------------|---|
| <b>Grade A</b> | One (or more) mucosal break no longer than 5 mm that does not extend between the tops of two mucosal folds  |
| <b>Grade B</b> | One (or more) mucosal break more than 5 mm long that does not extend between the tops of two mucosal folds  |
| <b>Grade C</b> | One (or more) mucosal break that is continuous between the tops of two or more mucosal folds but which involve less than 75% of the circumference |
| <b>Grade D</b> | One (or more) mucosal break which involves at least 75% of the esophageal circumference   |

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**Key Learning Points/Tips and Tricks**

- Adequate mucosal visualization should be performed after meticulous washing with mucolytic and antifoaming agents using a high definition endoscope.
- Accurate endoscopic assessment of reflux esophagitis presence and severity is vital in making accurate decisions about patients' management and prognosis.
- The LA classification system is the most validated, reproducible, and accurate in this setting.
- It should be uniformly used among endoscopists performing upper gastrointestinal endoscopy procedures.

**Scripted Voiceover**

| Time<br>(min:sec) | Voiceover text  |
|-------------------|---|
| 00:00             | This is a video demonstration of the Los Angeles (LA) Classification of Gastroesophageal Reflux Disease, which ranges from mild or grade A, to severe or grade D.           |
| 00:14             | LA grade A reflux disease is defined by one or more mucosal breaks no longer than 5 mm that does not extend between the tops of two mucosal folds.                          |
| 00:27             | This is demonstrated in this patient with the tip of the gastroscope at the gastroesophageal junction; the esophagus is inflated to assess pathology in an accurate manner. |
| 00:44             | As you will see in this still image, there are few mucosal breaks which are less than 5 mm in diameter.   |
| 00:56             | And these mucosal breaks do not extend between the tops of two or more mucosal folds.   |
| 01:08             | LA grade B reflux disease is defined by one or more mucosal breaks more than 5 mm long and do not extend between the tops of two mucosal folds.                             |
| 01:20             | In this patient, you will see the esophagus is examined and there are mucosal breaks more than 5 mm long.   |

|       |  |
|-------|--|
| 01:33 | Clearly, they do not extend between the tops of mucosal folds.   |
| 01:45 | This is another view of the same pathology with the additional finding of a short tongue of Barrett's esophagus at the 11 o'clock position.  |
| 01:54 | LA grade C reflux disease is defined by one or more mucosal breaks that are continuous between the tops of two or more mucosal folds but which involve less than 75% of the circumference.       |
| 02:09 | You will note in this particular patient, mucosal breaks are longer than 5 mm and extend between the tops of mucosal folds; however, they involve less than 75% of the esophageal circumference. |
| 02:31 | Therefore, this is consistent with a diagnosis of grade C reflux disease.  |
| 02:39 | LA grade D reflux disease is defined by one or more mucosal breaks that involve at least 75% of the esophageal circumference.  |
| 02:51 | This is demonstrated in this patient who has ulceration in the mucosa involving the whole of the circumference of the esophagus.   |
| 03:06 | With grade D reflux disease; there is a higher risk of developing peptic strictures as demonstrated in this patient.   |

**References**

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